GEA — general education assessment

measuring achievement
improving learning
transforming experiences

Critical thinking shares a symbiotic relationship with learning. This means the two processes are closely connected and interdependent. Effective learners think critically about the subjects they are studying, which leads to authentic and enriching learning experiences. To cultivate deeper learning and reinforce the importance of learning to think well, PVCC has made Critical Thinking its core learning outcome. It is academically sound and civically judicious for PVCC, a learning centered college, to place critical thinking at the heart of everything we do. There are nine supporting college-wide General Education Learning Outcome areas, which are: Civic Engagement, Critical Reading, Diversity and Global Awareness, Information Literacy, Oral Communication, Personal Development and Wellness, Problem Solving, Written Communication, Technology. In addition to critical thinking, these areas represent knowledge and abilities that educated persons should possess and apply.

Contrary to the popular belief that general education is something to "get out of the way", "a waste of time and money", or "not related to my major", general education is the foundation needed to be successful personally, academically, and professionally. According to a recent study by Hart Research Associates (2015), 91 % of employers surveyed "totally agree" that "a candidate's demonstrated capacity to think critically, communicate clearly, and solve complex problems is more important than his or her undergraduate major" (p. 6). It is beneficial for the college, employers, members of the community, and especially students to facilitate and assess learning related to general education. Students are encouraged to reflect on, self-assess, and further develop these abilities. Curricular and cocurricular learning facilitators are encouraged to use one or more of the general education rubrics to assess student learning in their courses and to annually report the results online using the GEA tool. The results are compiled, analyzed, and discussed to improve learning college-wide. Assessment of Learning Website: http://www.pvc.maricopa.edu/AL and GEA Tool: https://community.paradisevalley.edu/gea30/

The Critical Thinking Framework

For more than a decade, the PVCC assessment program has invested heavily and been deeply involved in inquiry related to critical thinking. We have and continue to review critical thinking literature and assessment methodologies, conduct research to measure students' critical thinking abilities, engage in the scholarship of teaching and learning, and foster a community of practice centered on critical thinking and assessment of learning. After evaluating various definitions of critical thinking and analyzing different approaches to teaching and learning critical thinking, we came to the logical conclusion that the Paul-Elder framework was the most suitable and comprehensive model for critical thinking at PVCC.

The framework was developed by Dr. Richard Paul and Dr. Linda Elder of the Foundation for Critical Thinking. Their framework is thoroughly explained in academic publications, often cited by scholars in critical thinking literature, and applied at both community colleges and universities for use across the disciplines. The framework consists of the *Elements of Thought*, which can be used to construct or deconstruct reasoning; the *Intellectual Standards*, which are applied to assess and improve thinking; and the *Intellectual Traits* that thinkers can aspire to embody over time (Paul & Elder, 2012). For more information, visit the Foundation for Critical Thinking Website at http://www.criticalthinking.org//

Paul and Elder (2012) define critical thinking as:

> A unique kind of purposeful thinking in any subject area or topic whether academic or personal, in which the thinker systematically and habitually displays intellectual traits such as intellectual perseverance, intellectual humility, intellectual empathy, and fairmindedness takes charge of the construction of thinking with awareness of its elements, such as questions at issue, information, concepts, inferences, assumptions, implications and point of view imposing criteria and intellectual standards on the thinking such as clarity, accuracy, precision, relevance, depth, breadth, logic, and fairness continually improving the quality of thinking making it more clear, accurate, precise; with greater depth and breadth, more logical; more relevant and significant, and more fair (p. xxxi).

The Paul-Elder Framework is exceptional because of the emphasis on fairmindedness, which guides learners and educators to use critical and creative thinking in unbiased and equitable ways. This crucial part of the framework is consistent with the college's mission to "educate the whole person" and foster positive social change. The application of the framework college wide and infusion of the Intellectual Standards in the General Education Learning Outcomes and Rubrics allows PVCC to place fairminded critical thinking at the heart of everything we do**.**

The Infusion of Fairminded Critical Thinking Into the General Education Learning Areas

Civic Engagement: Fairminded critical thinkers are concerned about the welfare of others.They analyze their own egocentric tendencies that are self-serving and consider the impact of sociocentrism, tendencies that are group serving. They question to determine whether actions are helpful or harmful.

Critical Reading: Fairminded critical thinkers are critical readers who read purposefully and actively. They seek meaning by reading beneath the surface and ask questions to clarify meaning and challenge assumptions. Critical readers clearly explain and accurately apply information they read.

Diversity and Global Awareness: Fairminded critical thinkers are aware of biases, keep an open mind, and interact effectively and appropriately in a diverse, multicultural, and global society.

Information Literacy: Fairminded critical thinkers determine information needed, establish a precise scope of research, and evaluate information and sources critically. They understand the legal and moral ramifications of violating intellectual property laws; therefore, they access, use, and cite sources properly.

Oral Communication: Fairminded critical thinkers speak clearly and competently, respect the audience, value multiple perspectives, and engender equality. They help others understand the complexity of subjects by emphasizing significant points, presenting information logically, and supporting ideas with reliable evidence.

Personal Development and Wellness: Fairminded critical thinkers recognize that thinking impacts every aspect of their lives. They take command of their thoughts in order to make healthy choices. They understand that becoming a fairminded critical thinker takes time and practice and commit to continual improvement.

Problem Solving: Fairminded critical thinkers identify significant issues to address and problems to solve. They use sound reasoning to develop key questions; determine the information needed; draw logical conclusions based on the information; and propose plausible and equitable solutions.

Technology: Fairminded critical thinkers make logical decisions about when and how to use technology. They recognize that the standards of clarity and accuracy apply to all modes of communication, including electronic communication. When using technology, critical thinkers use good judgment when communicating information about themselves. They demonstrate fairness by considering the impact of electronic communication and making content equally accessible.

Written Communication: Fairminded critical thinkers write clearly and purposely, respect the audience, value multiple perspectives, and promote equality. They help others understand the complexity of subjects by emphasizing significant points, presenting information logically, and supporting ideas with reliable evidence.

Civic Engagement

Fairminded critical thinkers are concerned about the welfare of others.They analyze their own egocentric tendencies that are self-serving and consider the impact of sociocentrism, tendencies that are group serving. They question or analyze whether actions are helpful or harmful.

With practice, learners will be able:

1. Summarize how civic engagement activities impact thoughts, feelings, and/or behavior related to perceived role in the community.

2. Describe ethical issues and consider the various implications.

3. Show evidence of fairness by providing a clear unbiased description of multiple points of view.

4. Explain what it would be like to think and feel as other people do.

5. Explain how actions can affect social, environmental, and/or economic aspects of the community now and in the future.

6. Provide specific steps that lead to sustainability.

7. Analyze how public policy, political systems, government, or historical events impact social, environmental, and/or economic aspects of the community.

8. Explain how course content can be applied to civic engagement activities.

9. Synthesize how curricular and cocurricular activities collectively impact learning, personal growth, or educational goals.

PVCC General Education Civic Engagement Rubric

Dimension	Score = 2: meets or exceeds standards for competency	Score = 1: needs improvement	Score = 0: does not meet minimum standards
Civic Identity	Summarized in *depth* how personal perspective and perceived role in the community are connected to and/or impacted by the civic engagement activity.	Summarized in general how personal perspective and perceived role in the community are connected to and/or impacted by the civic engagement activity.	Summarized superficially how personal perspective and perceived role in the community are connected to and/or impacted by the civic engagement activity.
Ethical Issues and Dilemmas	Showed evidence of *fairness* by providing a *clear* unbiased description of multiple points of view and *specific* examples of what it would be like to think and feel as other people do.	Attempted fairness by vaguely describing points of view and what it would be like to think and feel as other people do.	Made no attempt at fairness. Provided a one-dimensional or no description and/or provided a biased description of others' thoughts and feelings.
Sustainability	*Clearly* explained how actions can affect social, environmental, and/or economic aspects of the community now and in the future and provided specific examples of steps that lead to sustainability (*breadth/depth*).	Clearly explained how actions can affect social, environmental, and/or economic aspects of the community now and in the future but did not provide specific examples of steps that lead to sustainability.	Failed to explain how actions can affect social, environmental, and/or economic aspects of the community now and in the future and did not provide specific examples of steps that lead to sustainability.
Civic Knowledge	Provided an in *depth* and *accurate* analysis of how public policy, political systems, government, or historical events impact social, environmental, and/or economic aspects of the community.	Provided a vague, but accurate, analysis of how public policy, political systems, government, or historical events impact social, environmental and/or economic aspects of the community.	Provided an inadequate analysis of how public policy, political systems, government, or historical events impact social, environmental and/or economic aspects of the community.
Integrative Learning	Explained in *depth* how the activity (cocurricular, service learning, campus resource) and course content or program of study (Field of Interest, Major) are connected and included *specific* examples of how the two collectively impact learning, personal growth, or educational goals.	Explained vaguely how the activity (cocurricular, service learning, campus resource) and course content or program of study (Field of Interest, Major) are connected and described in general how the two collectively impact learning, personal growth, or educational goals.	Explained superficially, without demonstrating interconnectivity, how the activity (cocurricular, service learning, campus resource) and course content or program of study (Field of Interest, Major) impact learning, personal growth, or educational goals.

Critical Reading

Fairminded critical thinkers are critical readers who read purposefully and actively. They seek meaning by reading beneath the surface and ask questions to clarify meaning and challenge assumptions. Critical readers clearly explain and accurately apply information they read.

With practice, learners will be able to:

1. Read actively and purposefully.

2. Demonstrate an understanding of the overall meaning of the information in the text.

3. Accurately explain ideas from the text.

4. Make specific and relevant connections to course content.

5. Explain in depth their personal connection to the text.

6. Accurately transfer ideas from the text to a different context.

7. Accurately and fairly apply concepts from the text to real life situations.

PVCC General Education Critical Reading Rubric

Dimension	Score = 2: meets or exceeds standards for competency	Score = 1: needs improvement	Score = 0: does not meet minimum standards for competence
Clarifying Meaning and Asking Questions	Shows evidence of reading actively by taking *relevant* and *useful* notes, posing vital questions, highlighting *significant* parts of the text, identifying key concepts, and/or defining unfamiliar terms.	Shows some evidence of reading actively by taking somewhat *relevant* and *useful* notes, posing related questions, highlighting parts of the text, and identifying concepts and unfamiliar terms.	Shows little or no evidence of reading actively by taking seemingly irrelevant notes, posing unrelated or no questions, and/or highlighting random parts of the texts.
Comprehension	Explains in *depth* the topic and main idea(s) and *accurately* identifies the *significant* details/evidence that support the main idea(s).	Explains on a general level the topic and main idea(s) and *accurately* identifies some of the details/evidence that support the main idea(s).	Explains on a surface level the topic and main idea(s) and/or inaccurately identifies the details/evidence that support the main idea(s).
Explication (to explain in detail, make something clear)	*Clearly* explains ideas from the text and makes *precise* connections to *relevant* discipline or course content.	*Vaguely* explains ideas from the text and makes ambiguous connections to discipline or course content.	Did not explain ideas from the text and/or makes seemingly irrelevant connections to discipline or course content.
Reflection	Shares *significant* personal insights, opinions, or feelings about text with in-*depth* connections.	Shares *significant* personal insights, opinions, or feelings but does not thoroughly explain how they relate to the text.	Shares insignificant personal insights, opinions, or feelings unrelated to the text.
Application	*Accurately* and *fairly* applies concepts from the text to a different context or situation.	Less *accurately* and/or questionably applies concepts from the text to a new context or situation.	Erroneously and/or unjustly applies concepts from the text to a new context.

Diversity and Global Awareness

Fairminded critical thinkers are aware of biases, keep an open mind, and interact effectively and appropriately in a diverse, multicultural, and global society.

With practice, learners will be able to:

1. Explain with precision the impact of culture and worldview on self-concept, thoughts, behaviors, and values.

2. Explain the significance of multiple perspectives to understanding.

3. Collaborate impartially with others and fairly consider their beliefs and perspectives.

4. Thoroughly explain concept(s) related to diversity and illustrate the concept(s) through the use of specific examples.

5. Identify unjust practices and apply strategies for creating equitable conditions.

6. Describe how culture shapes and is influenced by aspects of society (ie: arts, literature, institutions, or behavior).

PVCC General Education Diversity and Global Awareness Rubric

Dimension	Score = 2: meets or exceeds standards for competency	Score = 1: needs improvement	Score = 0: does not meet minimum standards for competence
Self-Awareness	Explains with *precision* the impact of culture/worldview on self-concept, thoughts, behaviors, and/or values.	Explains approximately the impact of culture/worldview on self-concept, thoughts, behaviors and/or values.	Explains roughly or inconclusively the impact of culture/worldview on self-concept, thoughts, behaviors, and/or values.
Collaboration	Collaborates *impartially* with others and *fairly* considers their beliefs and perspectives.	Collaborates with others, but struggles to be impartial and/or fairly consider their beliefs and perspectives.	Completes tasks but does not collaborate with others and/or dismisses their beliefs and perspectives.
Understanding of Diversity	*Thoroughly* explains concepts related to diversity and provides specific examples that demonstrate the complexity of the concept.	Partially explains concepts related to diversity and provides relevant but simplistic examples.	Superficially explains concepts related to diversity but does not provide relevant examples.
Ethnocentrism and Inclusion	Identifies ethnocentrism and applies *specific* and *logical* strategies to create equitable conditions.	Identifies ethnocentrism and applies *specific* but less logical strategies to create equitable conditions.	Identifies ethnocentrism and makes general references to inclusiveness and/or applies illogical or invalid strategies.
Human, cultural, and global contributions	Demonstrates *breadth* of understanding by synthesizing multiple perspectives of how culture shapes and is influenced by aspects of society (ie: arts, literature, institutions, or behavior).	Demonstrates *breadth* of understanding by describing but not connecting multiple perspectives of how culture shapes and is influenced by aspects of society (ie: arts, literature, institutions, or behavior).	Demonstrates a narrow understanding by providing a single perspective or instance of how culture shapes and is influenced by aspects of society (ie: arts, literature, institutions, or behavior).

Information Literacy

Fairminded critical thinkers determine information needed, establish a precise scope of research, and evaluate information and sources critically. They understand the legal and moral ramifications of violating intellectual property laws; therefore, they access, use, and cite sources properly.

With practice, learners will be able to:

1. Determine the nature and extent of the information needed to define the scope of research for a specific assignment or other intellectual endeavor.

2. Evaluate sources critically and select significant information to use based on authority, credibility, relevance, timeliness, and accuracy.

3. Explain the economic, legal, and social implications of using information.

4. Use information ethically and legally.

5. Accurately cite sources.

PVCC General Education Information Literacy Rubric

Dimension	Score = 2: meets or exceeds standards for competency	Score = 1: needs improvement	Score = 0: does not meet minimum standards for competence
Scope of Research	Defines a *precise* scope of research *relevant* to a specific assignment or other intellectual endeavor by determining the nature and extent of information needed. If applicable, uses key concepts and search terms *accurately*.	Defines a general scope of research *relevant* to a specific assignment or other intellectual endeavor by determining the nature and extent of information needed. If applicable, uses key concepts and search terms questionably.	Defines an inexact scope of research for a specific assignment or other intellectual endeavor and/or uses key concepts and search terms incorrectly.
Analyzing Sources	Examines information *in depth* by using all of the specific criteria of authority, credibility, relevance, timeliness, and accuracy to make judgements about what sources to use.	Examines information in general by using some of the specific criteria of authority, credibility, relevance, timeliness, and accuracy to make judgements about what sources to use.	Examines information on the surface by using one or two of the specific criteria of authority, credibility, relevance, timeliness, and accuracy to make judgements about what sources to use.
Intellectual Property	Shows evidence of *fairmindedness* and a thorough understanding of the various economic, legal, and social implications of using information by: adhering to intellectual property laws and guidelines, *accurately* giving credit to the original ideas of others, and following citation formatting standards with zero or few errors.	Shows some evidence of *fairmindedness* and a partial understanding of the various economic, legal, and social implications of using information by: adhering to intellectual property laws and guidelines, giving credit to the original ideas of others and following citation formatting standards with some errors.	Shows little or no evidence of *fairmindedness* and understanding of the various economic, legal, and social implications of using information by: not adhering to intellectual property laws and guidelines and/or not giving credit to the original ideas of others and/or not following citation formatting standards.

Oral Communication

Fairminded critical thinkers speak clearly and competently, respect the audience, value multiple perspectives, and engender equality. They help others understand the complexity of subjects by emphasizing significant points, presenting information logically, and supporting ideas with reliable evidence.

With practice, learners will be able to:

1. Communicate orally his/her ideas on a topic objectively or subjectively in a competent and confident manner.

2. Choose and narrow a topic appropriately for the audience, occasion, and purpose.

3. Communicate the thesis/specific purpose in a manner appropriate for the audience and occasion.

4. Provide supporting material appropriate to the topic, audience, occasion, and purpose.

5. Use an organizational pattern appropriate to the topic, audience, occasion, and purpose.

6. Use language appropriate to the topic, audience, occasion, and purpose.

7. Use vocal variety in rate, pitch, and intensity (volume) to heighten and maintain interest and that is appropriate to the topic, audience, occasion, and purpose.

8. Use pronunciation, grammar, and articulation appropriate to the topic, audience, occasion, and purpose.

9. Use physical behaviors that support the verbal message and that are appropriate to the topic, audience, occasion, and purpose.

"The Competent Speaker" Speech Evaluation Form (Speech Communication Association)

PVCC General Education Oral Communication Rubric

Dimension	Score = 2: meets or exceeds standards for competence	Score = 1: needs improvement	Score = 0: does not meet minimum standards for competence
ORGANIZATION – Dimensions are aligned with Six Step Guide to Organizing Effective Presentations; see http://www.pvc.maricopa.edu/AL/gened_oral.html			
1. Opening Steps: Excite, Launch, & Relate	Completes <u>all</u> of the following: 1. captures ~~the~~ audience's attention 2. *clearly* states the *specific* purpose 3. explains the *significance* of the presentation and tells the audience how they will benefit from listening	Completes <u>two</u> of the following: 1. captures ~~the~~ audience's attention 2. *clearly* states the s*pecific* purpose 3. explains the *significance* of the presentation and tells the audience how they will benefit from listening	Completes <u>one</u> or <u>none</u> of the following: 1. captures ~~the audien~~ce's attention 2. *clearly* states the *specific* purpose 3. explains the *significance* of the presentation and tells the audience how they will benefit listening
2. Inform Step	Presents information in an organized and *logical* manner with *precise* transitions. Uses supporting materials *accurately.*	Presents information with some structure and logic with simple transitions. Uses supporting materials questionably.	Presents information randomly and/or illogically with simple or no transitions. Uses supporting materials incorrectly.
3. Closing Steps: Reiterate & Energize	*Clearly* restates the purpose and summarizes key points from the presentation. Brings the presentation to a satisfying close.	Vaguely summarizes ideas presented, but the key points are unclear. The concluding remarks are not fully developed.	The student ends the presentation abruptly without summarizing the key points. The audience is left wondering if the presentation is finished.
DELIVERY - Dimensions are aligned with Six Step Guide to Delivering Effective Presentations; see http://www.pvc.maricopa.edu/AL/gened_oral.html			
4. Vocal Variety, Pronunciation, & Articulation	The student generally uses appropriate vocal variety (volume, rate, pitch, quality), pronunciation, and articulation. Audience remains focused on presentation.	At times, the student uses inappropriate vocal variety, pronunciation, and/or articulation; however, it does not significantly distract the audience from the presentation.	The student uses inappropriate vocal variety, pronunciation, and/or articulation so often that the audience loses focus.
5. Eye Contact, Gestures, Facial Expressions, Posture, & Movements	The student uses appropriate eye contact, gestures, facial expressions, posture, and movements.	At times, the student uses inappropriate eye contact, gestures, facial expressions, posture, and/or movements; however, it does not significantly distract the audience from the presentation.	The student uses inappropriate eye contact, gestures, facial expressions, posture, and/or movements so often that the audience loses focus.
6. Vocalized Pauses and Distracting Mannerisms	The student uses vocalized pauses (such as "um" or "uh") and distracting mannerisms (such as jiggling coins in a pocket or touching hair) minimally.	At times, the student uses vocalized pauses and/or distracting mannerisms; however, it does not significantly distract the audience from the presentation.	The student uses vocalized pauses and/or distracting mannerisms so often that the audience loses focus.

Personal Development and Wellness

Fairminded critical thinkers recognize that thinking impacts every aspect of their lives. They take command of their thoughts in order to make healthy choices. They understand that becoming a fairminded critical thinker takes time and practice and commit to continual improvement.

With practice, learners will be able to:

1. Demonstrate self-direction

2. Determine a *clear* purpose, measurable goals with *precise* steps and timeframe.

3. Identify and practice self-care, including mind, body, and spiritual dimensions. Elements include exercise, nutritious diet/water intake, rest/sleep, sense of connectedness, renewal practices, self-protection.

4. Communicate effectively in order to develop and maintain interpersonal relationships.

5. Identify and make decisions based on self-concept, personal interests, skills, limitations, and values.

6. Develop *clear, responsible* financial goals and identify *specific, suitable* strategies and tools for budgeting, utilizing financial resources, managing debt, and/or saving and investing.

7. Demonstrates an *in-depth* understanding of the process of career planning and management by integrating results of self-assessments, *accurately* analyzing *significant* current and future occupational/workplace trends, and developing a *precise* action plan for educational and career goal attainment.

8. Practice professional habits and/or industry standards for success and growth.

PVCC General Education Personal Development and Wellness Rubric

Dimension	Score = 2: meets or exceeds standards for competency	Score = 1: needs improvement	Score = 0: does not meet minimum standards for competence
Self-Direction	Demonstrates *significant* initiative by taking personal responsibility for decisions and maintaining a growth mindset by using *relevant* resources and/or examining and implementing useful feedback.	Demonstrates some initiative in at least three areas addressed (taking personal responsibility for decisions, employing growth mindset, etc.) or with limited attempts to take initiative.	Demonstrates little to no initiative in taking personal responsibility for decisions and exhibits a fixed mindset. Does not utilize resources, and/or feedback appropriately.
Goals and Purpose	Develops goals that include all of the following: worded as positive statements, aligned with a *clear* purpose, are realistic, are measurable, and includes *precise* steps and a timeframe.	Develops vague goals that identify a *clear* purpose, measurable goals with specific steps and timeframe.	Does not identify a *clear* purpose, measurable goals with specific steps and timeframe.
Self-Care * See tool	*Clearly* identifies and applies the practices of self-care related to mind, body, and/or spirit.*	*Clearly* identifies but does not apply the practice of self-care related to mind, body, and/or spirit.	Does not identify and apply the practices of self-care related to mind, body, and/or spirit.
Interpersonal Communication	Proficiently uses communication that is *clear, accurate, relevant*, and *fair* to develop positive connections with others (e.g., self-disclosure, language, non-verbal cues, active listening)	Adequately uses communication that is *clear, accurate, relevant*, and *fair* to develop positive connections with others(e.g., self-disclosure, language, non-verbal cues, active listening)	Inadequately uses communication that is *clear, accurate, relevant*, and *fair* to develop positive connections with others (e.g., self-disclosure, language, non-verbal cues, active listening)
Self-Awareness	*Clearly* identifies self-concept, abilities, limitations, and/or values and makes *logical* decisions accordingly.	*Clearly* identifies self-concept, abilities, limitations, and/or values but makes incongruent decisions or fails to connect them with decisions.	Struggles to identify self-concept, abilities, limitations, and/or values.
Financial Literacy	Develops *clear*, *responsible* financial goals and identifies *specific, suitable* strategies/tools for budgeting, utilizing financial resources (ie: FAFSA, Loans, Grants, Scholarships), managing debt, and/or saving and investing.	Develops vague financial goals and identifies general strategies/ tools for budgeting, utilizing financial resources (ie: FAFSA, Loans, Grants, Scholarships), managing debt, and/or saving and investing.	Develops obscure or unreliable financial goals and/or identifies incompatible strategies/ tools for budgeting, utilizing financial resources (ie: FAFSA, Loans, Grants, Scholarships), managing debt, and/or saving and investing.
Career Planning	Demonstrates an *in-depth* understanding of the process of career planning and management; integrates results of *relevant* formal and informal self-assessments to identify skills, interests and values for fulfilling career options; *accurately* analyzes *significant* occupational/workplace trends through utilizing *related* resources; and develops a *comprehensive* action plan for educational and career goal attainment.	Demonstrates some understanding of the process of career planning and management; includes results of *relevant* formal and informal self-assessments to identify skills, interests and values for fulfilling career options; *accurately* analyzes occupational/workplace trends through utilizing *related* resources; and develops a partial plan for educational and career goal attainment.	Demonstrates limited understanding of the process of career planning and management; may or may not refer to results of formal and informal self-assessments to identify skills, interests and values for fulfilling career options; *incorrectly* analyzes occupational/workplace trends; and/or develops a fragmented or no action plan for educational and career goal attainment.
Student Professionalism	Regularly demonstrates effective work habits and professional standards appropriate for the work-based experience (may include: adherence to dress and/or appearance as determined by safety requirements or work site norms with respect to cultural traditions; personal accountability; time management; punctuality; maintaining confidentiality; and respecting the worth/dignity of every individual). Exhibits a notable capacity for improvement by engaging in behaviors that ensure continuous growth in the learning environment including resilience when facing challenges, ability to adapt, fair recognition of limitations, and active requests for support or resources.	Occasionally demonstrates effective work habits and professional standards appropriate for the work-based experience (may include: adherence to dress and/or appearance as determined by safety requirements or work site norms with respect to cultural traditions; personal accountability; time management; punctuality; maintaining confidentiality; and respecting the worth/dignity of every individual). Exhibits some capacity for improvement, needs direction or guidance towards behaviors that ensure continuous growth in the learning environment.	At times demonstrates effective work habits and/or regularly demonstrates ineffective work habits for the work-based experience (may include: adherence to dress and/or appearance as determined by safety requirements or work site norms with respect to cultural traditions; personal accountability; time management; punctuality; maintaining confidentiality; and respecting the worth/dignity of every individual). Exhibits limited capacity for improvement and/or dismisses opportunities for growth.

Problem Solving

Fairminded critical thinkers identify significant issues to address. They use sound reasoning to develop key questions; determine the information needed; draw logical conclusions based on the information; and propose plausible and equitable solutions.

With practice, learners will be able to:

1. Identify a clear purpose and rationale for endeavor (experiment, analysis, evaluation, trouble-shoot, resolution, or mediation).

2. Develop a specific and relevant research question(s) and/or hypothesis(es).

3. Accurately collect data, distinguish between relevant and extraneous information, and apply supporting evidence.

4. Explain research controls, recognize limitations, and evaluate assumptions.

5. Distinguish between plausible and implausible inferences to draw logical conclusions.

6. Determine an appropriate method of inquiry and accurately apply it.

7. Analyzes multiple perspectives in a fair way and incorporates reasonable points of view.

8. Distinguish between effective and ineffective course of action, explain the criteria used, and apply sound reasoning to justify implementation.

9. Explain the consequences of a course of action and predict the implications of a change in variables.

PVCC General Education Problem Solving Rubric

Dimension	Score = 2: meets or exceeds standards for competency	Score = 1: needs improvement	Score = 0: does not meet minimum standards
Purpose and Rationale	*Clearly* describes the reason and *significance* of the endeavor. States *precise* goals for the experiment, analysis, evaluation, troubleshoot, resolution, or mediation.	Vaguely describes the reason and *significance* of the endeavor. States general goals for the experiment, analysis, evaluation, troubleshoot, resolution, or mediation.	Obscurely describes the reason and *significance* of the endeavor. Does not include or states imprecise goals for the experiment, analysis, evaluation, troubleshoot, resolution, or mediation.
Question	Proposes a research question(s) or hypothesis(es) that is *specific* in scope and *relevant* to the context.	Proposes a research question(s) or hypothesis(es) that is *vague in* scope but less *relevant* to the context.	Proposes a research question(s) or hypothesis(es) that is vague in scope and unrelated to the context.
Information	*Accurately* collects evidence/data, *clearly* distinguishes relevant from irrelevant information, and applies evidence/data to solve the problem.	*Less accurately* collects evidence/data, generally distinguishes relevant from irrelevant information, and applies evidence/data to solve the problem.	Erroneously collects evidence/data and/or fails to distinguish relevant from irrelevant information, and/or inaccurately applies evidence/data to solve the problem.
Assumptions	*Clearly* states the experiment controls, research limitations, and/or what is being taken for granted in the endeavor. *Clearly* distinguishes between *reasonable* and unreasonable assumptions.	*Vaguely* states the experiment controls, research limitations, and/or what is being taken for granted in the endeavor. Roughly distinguishes between *reasonable* and unreasonable assumptions.	Incomprehensibly states the experiment controls, research limitations, and/or what is being taken for granted in the endeavor. Inadequately or does not distinguish between *reasonable* and unreasonable assumptions.
Inferences	Draws *logical* conclusions based on information including graphs, charts, tables, literature, interviews, case studies, or other evidence. Explains *in depth* whether or not information supports the conclusion.	Draws *logical* conclusions based on information including graphs, charts, tables, literature, interviews, case studies, or other evidence. Inadequately explains whether or not information supports the conclusion.	Draws illogical conclusions based on information including graphs, charts, tables, literature, interviews, case studies, or other evidence. Uses information that does not support the conclusion.
Concepts	Selects the most *relevant and useful* concepts, theories, or methods and *accurately* applies them.	Selects less significant but still applicable concepts, theories, or methods and *accurately* applies them.	Selects irrelevant or inapplicable concepts, theories, or methods and/or incorrectly applies them.
Point of View	Demonstrates *breadth* of understanding by acknowledging biases, *fairly* analyzing multiple perspectives, and incorporating alternative *reasonable* viewpoints.	Attempts *breadth* of understanding by acknowledging biases and *fairly* analyzing multiple perspectives, but does not incorporate alternative viewpoints.	Inadequately demonstrates *breadth* of understanding and identifies biases and/or multiple perspectives in a simplistic way.
Solution	Determines the most *feasible* and *fair* solution. Provides a *thorough* explanation of the solution, a justification for its implementation, and a *clear* description of the criteria used.	Determines an acceptable and *fair* solution. Provides a *limited* explanation of the solution, a justification for its implementation, and a general description of the criteria used.	Determines an impractical and/or unjustifiable solution. Provides a superficial explanation of the solution, its implementation, and the criteria used or no explanation.
Implications	Explains in a *judicious* way how implementing a specific solution impacts parties involved. *Clearly* describes how changes in conditions might alter which solution to enact.	Explains in a limited way how implementing a specific solution impacts parties involved. Vaguely describes how changes in conditions might alter which solution to enact.	Explains in a careless way how implementing a specific solution impacts parties involved. Incomprehensibly describes how changes in conditions might alter which solution to enact.

Technology

Fairminded critical thinkers make logical decisions about when and how to use technology. They recognize that the standards of clarity and accuracy apply to all modes of communication, including electronic communication. When using technology, critical thinkers use good judgement when communicating information about themselves. They demonstrate fairness by considering the impact of electronic communication and making content equally accessible.

With practice, learners will be able to:

1. Determine when technology is useful and select the most appropriate tool(s) and technology to address a specific task.

2. Use online and electronic resources to communicate, collaborate, and retrieve information.

3. Use a variety of technological resources and applications to support personal, academic, and professional productivity.

4. Use technology to create presentational materials that are clear and relevant to the purpose.

5. Analyze audience members' needs and use technology to create presentational content that is equally accessible.

6. Use technology to send messages or share information that is clear, accurate, respectful, and follows format guidelines.

PVCC General Education Technology Rubric

Dimension	Score = 2: meets or exceeds standards for competency	Score = 1: needs improvement	Score = 0: does not meet minimum standards for competence
Mathematical & Statistical Technology	Makes a *logical* choice among available mathematical technology and *accurately* uses the technology to accomplish the task or solve the problem.	Makes a *logical* choice among available mathematical technology but uses the technology in a somewhat accurate way to accomplish the task or solve the problem.	Makes an invalid choice among available mathematical technology and/or incorrectly uses the technology to accomplish the task or solve the problem.
Presentational Technology	Selects the most appropriate presentational technology and *accurately* uses the technology to present ideas. Creates presentational materials that are *clear* and *relevant* to the purpose. Demonstrates *fairness* by accommodating the audience members needs and ensuring that content is equally accessible.	Selects an acceptable presentational technology and somewhat *accurately* uses the technology to present ideas. Creates presentational materials that are vague but *relevant* to the purpose. Attempts *fairness* by accommodating some of the audience members needs and ensuring that some of the content is equally accessible.	Selects an inappropriate presentational technology and/or inaccurately uses the technology to present ideas. Creates presentational materials that are unclear and/or irrelevant to the purpose. Makes no attempt at fairness.
Communication Technology	Demonstrates an *in-depth* understanding of electronic communication by composing and sending messages that are *clear* and follow format guidelines. Analyzes the effect of electronic messages on self and others by being appropriate and respectful.	Demonstrates a limited understanding of electronic communication by composing and sending messages that are vague and may or may not follow format guidelines. Considers the effect of electronic messages on self and others by being appropriate and respectful.	Demonstrates an inadequate understanding of electronic communication by composing and sending messages that are unclear and do not follow format guidelines. Disregards the effect of electronic messages on self and others by being inappropriate and/or disrespectful.

Written Communication

Fairminded critical thinkers write clearly and purposely, respect the audience, value multiple perspectives, and promote equality. They help others understand the complexity of subjects by emphasizing significant points, presenting information logically, and supporting ideas with reliable evidence.

With practice, learners will be able to:

1. Write about a topic objectively or subjectively in a clear and competent manner.

2. Write logically using appropriate language, supporting materials, and accurate transitions that meet the needs of the intended audience.

3. Use supporting information that is relevant, fair, and significant.

4. Use appropriate grammar, punctuation, vocabulary sentence structure, and format guidelines.

PVCC General Education Written Communication Rubric

Dimension	Score = 2: meets or exceeds standards for competency	Score = 1: needs improvement	Score = 0: does not meet minimum standards for competence
Introduction and Purpose	Demonstrates an *accurate/definitive* understanding of context and audience. Purpose is *relevant* and *clear*ly indicates the writer's objective or stance.	Demonstrates a questionable understanding of context and audience. Purpose is *relevant*, but vague.	Demonstrates an obscure awareness of context and audience. Purpose is unrelated and vague.
Development	Completes <u>all</u> of the following: 1. presents a *logical* progression of ideas 2. includes *precise* transitions to connect ideas 3. fully develops ideas that reflect the complexities of the topic (*depth*)	Completes <u>two</u> of the following: 1. presents a *logical* progression of ideas 2. includes *precise* transitions to connect ideas 3. fully develops ideas that reflect the complexities of the topic (*depth*)	Completes <u>1 or none</u> of the following: 1. presents a *logical* progression of ideas 2. includes *precise* transitions to connect ideas 3. fully develops ideas that reflect the complexities of the topic (*depth*)
Supporting Ideas with Evidence	Includes supporting information that is *significant* and *relevant* to the topic. Presents evidence in a *fair* and unbiased manner.	Includes supporting information that is seemingly trivial yet somewhat *relevant* to the topic. Presents evidence in a *fair* and unbiased manner.	Includes supporting information that is trivial and unrelated to the topic and/or fails to support ideas with evidence. Presents evidence in a unfair and biased manner.
Mechanics	There are very few, if any, grammatical or punctuation errors. Vocabulary is *accurate* and *precise*. Sentence structures are *clear*.	There are several grammatical and/or punctuation errors. Vocabulary is adequate, but lacks precision. Sentence structures are vague.	There are numerous and serious grammatical and punctuation errors. Vocabulary is inadequate and simplistic. Sentence structures are faulty; the meaning is unclear.
Format	All or most of the format guidelines were *accurately* applied, including any applicable source documentation.	Some of the format guidelines were *accurately* applied, including any applicable source documentation.	Few or none of the format guidelines were *accurately* applied, including any applicable source documentation.